APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,561	09/22/2005	Seung-Woo Lee	AB-1751 US	2813

32605   7590   03/12/2010
Haynes and Boone, LLP
IP Section
2323 Victory Avenue
SUITE 700
Dallas, TX 75219

EXAMINER
ALMEIDA, CORY A

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
03/12/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/519,561	LEE, SEUNG-WOO
	Examiner	Art Unit	
	CORY A. ALMEIDA	2629	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>05 January 2010</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-3,6,8-13,15,16 and 21-23</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-3,6,8-13,15,16 and 21-23</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail. Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claims 1-3, 6, 8-13, 15, 16, and 21-23 are pending.

Claims 4, 5, 7, 14, and 17-20 are cancelled.

Claims 21-23 are new.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 22 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukutoku,

US-20010004253.

3.   In regards to claim 22, Fukutoku discloses a method of driving a liquid crystal panel (Fig.

8, 13) including a plurality of the data lines extending in a column direction (Fig. 8), a plurality

of the gate lines in a row direction (Fig. 8), and a plurality of first to third color pixels displaying

image based on signals received from the data lines and the gate lines and arranged in a matrix

(Par. 0005), and a signal controller receiving a plurality of the RGB image data and generating

control signals for driving the liquid crystal panel (Fig. 8, 11), the method comprising:

calculating a difference in gray between every two image data applied to a pair of adjacent odd

and even pixels in each block including pixels in a row for each of first to third colors value (Par.

0014-0015 describes a difference between two adjacent pixels); determining that a block is first

or second dot block depending on a sign of the gray difference when a magnitude of the gray

difference between the odd pixel and the even pixel in each pair in the block for at least one

color is larger than a critical value (Par. 0014-0015 describes determining a difference between

two adjacent pixels aka one being higher than the other aka a critical value), the first dot block

having the gray differences of a first sign, and the second dot block having the gray differences

of a second sign that is opposite to the first sign (Par. 0060); determining whether a previous

block in a previous row and the same column is the first or second dot block when a current

block in a current row and the same column is the first or second dot block (Par. 0061-0062),

wherein the current block is determined to be a double- dot block when both the current block

and the previous block are the first dot blocks or the second dot blocks (Par. 0061-0062); and

changing an inversion type of the liquid crystal display when the number of the double-dot

blocks is larger than a predetermined value (Par. 0062).

4.   In regards to claim 23, Fukutoku discloses a method of driving a liquid crystal panel (Fig.

8, 13) including a plurality of the data lines extending in a column direction (Fig. 8), a plurality

of the gate lines in a row direction (Fig. 8), and a plurality of first to third color pixels displaying

image based on signals received from the data lines and the gate lines and arranged in a matrix

(Par. 0005), and a signal controller receiving a plurality of the RGB image data and generating

control signals for driving the liquid crystal panel (Fig. 8, 11), the method comprising:

calculating a difference in gray between every two image data applied to a pair of adjacent odd

and even pixels in each block including pixels in a row for each of first to third colors value (Par.

0014-0015 describes a difference between two adjacent pixels); determining that a block is first

or second dot block depending on a sign of the gray difference when a magnitude of the gray

difference between the odd pixel and the even pixel in each pair in the block for at least one

color is larger than a critical value (Par. 0014-0015 describes determining a difference between

two adjacent pixels aka one being higher than the other aka a critical value), the first dot block

having the gray differences of a first sign, and the second dot block having the gray differences

of a second sign that is opposite to the first sign (Par. 0060); determining whether a previous

block in a previous row and the same column is the first or second dot block when a current

block in a current row and the same column is the first or second dot block (Par. 0061-0062),

wherein the current block is determined to be a double- dot block when both the current block

and the previous block are the first dot blocks or the second dot blocks (Par. 0061-0062); and

changing an inversion type of the liquid crystal display when the number of the first dot blocks is

larger than a first critical value and the number of the first double-dot blocks is larger than a

predetermined number of the first dot blocks, or the number of the second dot blocks is larger

than a second critical value and the number of the second double-dot blocks is larger than a

predetermined number of the second dot blocks(Par. 0062).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claim 1-3, 6, 11-13, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Fukutoku, US-20010004253 in view of Park, US20020130830.

7.   In regards to claim 1 and associated method claim 11, Fukutoku discloses a liquid crystal

panel (Fig. 8, 13) including a plurality of the data lines extending in a column direction (Fig. 8),

a plurality of the gate lines in a row direction (Fig. 8), and a plurality of first to third color pixels

displaying image based on signals received from the data lines and the gate lines and arranged in

a matrix (Par. 0005), a data driver applying data voltages required for image display to the data

lines (Fig. 8, 14), and a signal controller receives a plurality of first to third color image data for

the first to third color pixels, supplying the received image data to the data driver, and generates

control signals required for driving the liquid crystal panel (Fig. 8, 11), wherein the signal

controller changes an inversion type when 1) dot blocks are repeated in a predetermined pattern

(Par. 0014-0015 aka same size relationship repeats), each dot block including one or more pairs

of adjacent pixels in a row for at least one of the first to third color pixels each block pattern

includes at least one color pixels among the first to third color pixels (Par. 0014-0015), and 2) a

magnitude of difference in gray between the pixels in each pair is larger than a critical value in

each dot block value (Par. 0014-0015 describes a difference between two adjacent pixels aka one

being higher than the other aka a critical value), wherein the predetermined pattern includes a

first dot block in a first row and a second dot block located in the same columns as the first dot

block in a second row adjacent to the first row (Par. 0014-0015 the first dot block would be first

2 pixels in first row and the second dot block would be first two pixels in second row), wherein

the first dot block has the gray differences of a first sign, and the second dot block has the gray

differences of a second sign that is opposite to the first sign (Par. 0060), wherein the signal

controller determines whether each dot block is the first dot block or the second dot block (Par.

0061-0062).

       Fukutoku does not describe expressly wherein the signal controller comprises:

a line counter for determining a row to which the (dot) block belongs; and a block counter for

determining the position of the block in the row.

Park discloses wherein the signal controller comprises: a line counter for determining a row to which the block belongs; and a block counter for determining the position of the block in the row (Par. 0029-0031 the determiners sequentially go through each colored pixel in each row and column and thus must keep track of which row the pixel is in and also the position of the pixel in the row to determine if the gray level is high or low).

At the time of the invention, it would have been obvious that adjacent pixels (aka dot blocks) of Fukutoku in the frame could be gone through sequentially as Park discloses.

The motivation would have been a design choice as long as the pixels of the frame are all processed in order to determine if a flicker could occur.

Therefore, it would have been obvious to combine Park with Fukutoku to obtain the invention of claims 1 and 11.

8.   In regards to claim 2 and associated method claim 12, Fukutoku discloses the critical value has the first to third values for the first to third colors, and the first to third values are equal or different (Par. 0064 the values are allowed to be anything).

9.   In regards to claim 3 and associated method claim 13, Fukutoku discloses the first to third colors are red, green and blue colors, respectively, and the second value is smaller than the first and third values (Par. 0061 green has the largest transmittance value and so its critical value would have to be lowest to compensate).

10.   In regards to claim 6, Fukutoku discloses the pixels in each row are grouped into a plurality of blocks, each block including even number of pixels (a group of 2 adjacent pixels).

11.   In regards to claim 21, Fukutoku discloses a liquid crystal panel (Fig. 8, 13) including a plurality of the data lines extending in a column direction (Fig. 8), a plurality of the gate lines in

a row direction (Fig. 8), and a plurality of first to third color pixels displaying image based on signals received from the data lines and the gate lines and arranged in a matrix (Par. 0005), a data driver applying data voltages required for image display to the data lines (Fig. 8, 14), and a signal controller receives a plurality of first to third color image data for the first to third color pixels, supplying the received image data to the data driver, and generates control signals required for driving the liquid crystal panel (Fig. 8, 11), wherein the signal controller changes an inversion type when 1) dot blocks are repeated in a predetermined pattern (Par. 0014-0015 aka same size relationship repeats), each dot block including one or more pairs of adjacent pixels in a row for at least one of the first to third color pixels each block pattern includes at least one color pixels among the first to third color pixels (Par. 0014-0015), and 2) a magnitude of difference in gray between the pixels in each pair is larger than a critical value in each dot block value (Par. 0014-0015 describes a difference between two adjacent pixels aka one being higher than the other aka a critical value), wherein the predetermined pattern includes a first dot block in a first row and a second dot block located in the same columns as the first dot block in a second row adjacent to the first row (Par. 0014-0015 the first dot block would be first 2 pixels in first row and the second dot block would be first two pixels in second row), wherein the first and second blocks have the gray differences of a first sign or the first and second blocks have the gray differences of a second sign that is opposite to the first sign (Par. 0060), wherein the signal controller determines whether each dot block is the first dot block or the second dot block (Par. 0061-0062).

Fukutoku does not describe expressly wherein the signal controller comprises:

a line counter for determining a row to which the (dot) block belongs; and a block counter for

determining the position of the block in the row.

Park discloses wherein the signal controller comprises: a line counter for determining a

row to which the block belongs; and a block counter for determining the position of the block in

the row (Par. 0029-0031 the determiners sequentially go through each colored pixel in each row

and column and thus must keep track of which row the pixel is in and also the position of the

pixel in the row to determine if the gray level is high or low).

At the time of the invention, it would have been obvious that adjacent pixels (aka dot

blocks) of Fukutoku in the frame could be gone through sequentially as Park discloses.

The motivation would have been a design choice as long as the pixels of the frame are all

processed in order to determine if a flicker could occur.

Therefore, it would have been obvious to combine Park with Fukutoku to obtain the

invention of claims 21.

12.   Claims 8, 9, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Fukutoku, US-20010004253 and Park US-20020130830 in view of Clark, US- 3925777.

13.   In regards to claim 8 Fukutoku does not disclose expressly the block counter counts the

blocks by counting clock cycles after a data enable signal indicating sections for inputting the

image data becomes a high level.

Clark discloses a counter that counts clock signals (Col. 5, 50-53).

At the time of the invention, it would have been obvious to a person of ordinary skill in

the art to use the counter of Clark in place of the horizontal counter of Fukutoku.

The suggestion for doing so would have been design choice and the added simplicity of only having to count the clock pulses.

Therefore, it would have been obvious to combine Clark with Fukutoku to obtain the invention as specified in claim 8.

14.   In regards to claim 9 and the associated method claim 16, Fukutoku and Park do not disclose expressly the block counter counts the blocks by counting clock cycles after a predetermined number of clocks from raise of a horizontal synchronization signal to be input to the signal controller to a high level.

Clark discloses a counter that counts clock signals (Col. 5, 50-53).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the counter of Clark in place of the horizontal counter of Fukutoku.

The suggestion for doing so would have been design choice and the added simplicity of only having to count the clock pulses.

Therefore, it would have been obvious to combine Clark with Fukutoku and Park to obtain the invention as specified in claims 9 and 16.

15.   Claims 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukutoku, US-20010004253 and Park US-20020130830 in view of Baron, US-3740743.

16.   In regards to claim 10 and the associated method claim 15, Fukutoku and Park do not disclose expressly the line counter counts the rows based on timing of a data enable signal indicating sections for inputting the image data for a row or on timing of a horizontal synchronization signal.

Baron discloses counting rows by utilizing synchronization signals input into counters (Col. 5, 50-53).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the counter of Clark in place of the vertical counter of Fukutoku.

The suggestion for doing so would have been design choice and the added simplicity of using existing signals.

Therefore, it would have been obvious to combine Baron with Fukutoku and Park to obtain the invention as specified in claims 10 and 15.

Response to Arguments

17.   Applicant's arguments with respect to claims 1-3, 6, 8-13, 15, 16, and 21-23 have been considered but are moot in view of the new ground(s) of rejection, as presented above

Conclusion

18.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this
final action.

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to CORY A. ALMEIDA whose telephone number is (571) 270-
3143. The examiner can normally be reached on Monday through Friday 8AM to 4PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Alexander Eisen can be reached on 571-272-7687. The fax phone number for the
organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent
Application Information Retrieval (PAIR) system. Status information for published applications
may be obtained from either Private PAIR or Public PAIR. Status information for unpublished
applications is available through Private PAIR only. For more information about the PAIR
system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR
system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would
like assistance from a USPTO Customer Service Representative or access to the automated
information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin M Nguyen/   /CA/
Primary Examiner, Art Unit 2629

3/10/2010